

- 8 -

CLAIMS

1. A Stirling engine assembly comprising a Stirling engine having a head; a burner surrounding the head and comprising
5 a burner element on which a flame is sustained, the burner being fed with a combustible gas stream; a recuperator to preheat the gas stream with combustion products from the burner; and a coolant circuit positioned to absorb heat, which is radiated from the back of the burner element away
10 from the head, into a coolant stream separate from the gas stream.
2. An assembly according to claim 1, wherein the coolant stream is configured to pass around a cool end of the
15 Stirling engine prior to passing around the burner element.
3. An assembly according to claim 1, wherein the coolant stream is configured to receive heat from the exhaust gas from the burner after it has passed around the burner
20 element.
4. An assembly according to claim 3, wherein the coolant stream is configured to receive heat from a supplementary burner after it has passed around the burner element.
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5. An assembly according to any one of the preceding claims, wherein a flexible seal is provided between the burner and the Stirling engine head in order to prevent the escape of gases from the burner, and the coolant stream is
30 configured to cool the flexible seal.

- 9 -

6. An assembly according to claim 5, wherein the coolant stream is configured such that a common duct cools both the burner element and seal on a single pass around the head.

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